

Listing of Claims:

1. (Currently Amended) A transmission state indicating
method ~~comprising: in accordance with~~ for a predetermined
transmission system, in which high capacity data is divided into
a plurality of low capacity virtual containers and transmitted
5 via a plurality of channels which configure a communication
network based on clocks at the respective channels, the method
comprising:

acquiring a multiplexed frame in which mapping, accompanying
delay absorption processings corresponding to transmission states
10 at the respective channels, has been carried out based on a
reference clock with respect to virtual containers at the
respective channels included in a plurality of frames including
the plurality of low capacity virtual containers;

successively detecting factors at the respective channels
15 which are respectively included in the plurality of frames
included in the multiplexed frame, and which are to be objects
for delay absorption processings corresponding to the
transmission states at the respective channels, as a plurality of
pointer values for respectively evaluating the transmission
20 states at said plurality of channels which configure the
communication network;

successively correcting the plurality of pointer values based on variations in phases at the respective channels which are detected from phase differences between the clocks at the
25 respective channels and the reference clock; and

indicating the plurality of pointer values successively corrected, at the same time, corresponding to the plurality of channels.

2. (Original) The transmission state indicating method according to claim 1, further comprising:

storing said plurality of pointer values in association with information for indicating said plurality of pointer values at
5 the same time in accordance with said plurality of channels; and

reading out the plurality of pointer values stored in association with the information for indicating the plurality of pointer values corresponding to the plurality of channels, at the same time.

3. (Original) The transmission state indicating method according to claim 1, further comprising:

carrying out processing for indicating said plurality of pointer values by relative values with respect to a pointer value
5 of a reference channel to be a reference among said plurality of

channels when said plurality of pointer values are indicated at the same time corresponding to the plurality of channels.

4. (Original) The transmission state indicating method according to claim 1, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of the respective channels to be objects for the delay absorption processings, values of AU (Administrative Unit) pointers included in H1 bytes and H2 bytes which have been defined to show head portions of the virtual containers in case where the low capacity containers are contained in a payload, at the 4th row of an SOH (Section Overhead) frame in which the plurality of frames are frames of an STM (Synchronous transfer mode) and which is added to the payload of the frame of the STM.

5. (Original) The transmission state indicating method according to claim 1, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of the respective channels to be objects for the delay absorption processings, a value of H4 byte which has been defined at the 6th row of a POH (Pass Overhead) added to head portions of the respective virtual containers in case where said plurality of

frames are frames of an STM (Synchronous transfer mode) and the
10 virtual containers included in the frames of the STM are a VC-3
format or a VC-4 format.

6. (Original) The transmission state indicating method
according to claim 1, wherein, when the predetermined
transmission system is an SDH (Synchronous Digital Hierarchy)
system, the plurality of pointer values include, as factors of
5 the respective channels to be the objects for the delay
absorption processings, values of AU (Administrative Unit)
pointers included in H1 bytes and H2 bytes which have been
defined to show head portions of the virtual containers in case
where the low capacity containers are contained in a payload, at
10 the 4th row of an SOH (Section Overhead) frame in which said
plurality of frames are frames of an STM (Synchronous transfer
mode) and which is added to the payload of the frame of the STM,
and a value of H4 byte which has been defined at the 6th row of a
POH (Pass Overhead) added to the head portions of the respective
15 virtual containers in case where said plurality of frames are
frames of the STM (Synchronous transfer mode) and the virtual
containers included in the frames of the STM are a VC-3 format or
a VC-4 format.

7. (Original) The transmission state indicating method according to claim 1, further comprising:

converting the multiplexed frame on which mapping has been carried out into a concatenation mapping frame according to the
5 rules of concatenation mapping; and

detecting a plurality of index values included in the concatenation mapping frame converted according to rules of the concatenation mapping in place of the multiplexed frame on which mapping has been carried out.

8. (Currently Amended) A transmission state indicating apparatus ~~comprising: a multiplexed frame acquiring unit, in accordance with~~ for a predetermined transmission system, in which high capacity data is divided into a plurality of low
5 capacity virtual containers and transmitted via a plurality of channels which configure a communication network based on clocks at the respective channels, the apparatus comprising:

a multiplexed frame acquiring unit which acquires a multiplexed frame in which mapping, accompanying delay absorption
10 processings corresponding to transmission states at the respective channels, has been carried out based on a reference clock with respect to the virtual containers at the respective channels included in a plurality of frames including said plurality of low capacity virtual containers;

15 a pointer value detecting unit which successively detects
factors at the respective channels which are respectively
included in the plurality of channels included in the multiplexed
frame acquired by the multiplexed frame acquiring unit, and which
are to be objects for delay absorption processings corresponding
20 to the transmission states at the respective channels, as a
plurality of pointer values for respectively evaluating the
transmission states at the plurality of channels which configure
the communication network, and which successively corrects the
plurality of pointer values based on variations in phases at the
25 respective channels to be detected from phase differences between
the clocks at the respective channels and the reference clock;
and

 a display unit which indicates the plurality of pointer
values successively detected and corrected by the pointer value
30 detecting unit, at the same time, corresponding to the plurality
of channels.

9. (Original) The transmission state indicating apparatus
according to claim 8, further comprising:

 a storage unit which stores said plurality of pointer values
successively detected and corrected by the pointer value
5 detecting unit in association with information for indicating the

plurality of pointer values at the same time in accordance with the plurality of channels; and

10 a control unit which reads said plurality of pointer values stored in association with the information for indicating said plurality of pointer values corresponding to the plurality of channels at the storage unit, at the same time.

10. (Original) The transmission state indicating apparatus according to claim 8, further comprising:

5 a control unit which carries out processing for indicating the plurality of pointer values successively detected and corrected by the pointer value detecting unit, by relative values with respect to a pointer value of a reference channel to be a reference among the plurality of channels in the case where said plurality of pointer values are indicated at the same time corresponding to the said plurality of channels.

11. (Original) The transmission state indicating apparatus according to claim 8, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of the respective channels to be objects for the delay absorption processings, values of AU (Administrative Unit) pointers included in H1 bytes and H2 bytes which have been defined to show head

portions of the virtual containers in case where the low capacity containers are contained in a payload, at the 4th row of an SOH (Section Overhead) frame in which the plurality of frames are frames of an STM (Synchronous transfer mode) and are added to payloads of the frames of the STM.

12. (Original) The transmission state indicating apparatus according to claim 8, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of the respective channels to be objects for the delay absorption processings, a value of H4 byte which has been defined at the 6th row of a POH (Pass Overhead) added to head portions of the respective virtual containers in case where the plurality of frames are frames of an STM (Synchronous transfer mode) and the virtual containers included in the frames of the STM system are a VC-3 format or a VC-4 format.

13. (Original) The transmission state indicating apparatus according to claim 8, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of the respective channels to be objects for the delay absorption processings, values of AU (Administrative Unit) pointers included

in H1 bytes and H2 bytes which have been defined to show head portions of the virtual containers in case where the low capacity containers are contained in a payload, at the 4th row of an SOH (Section Overhead) frame in which said plurality of frames are frames of an STM (Synchronous transfer mode) and are added to the payload of the frame of the STM, and a value of H4 byte which has been defined at the 6th row of a POH (Pass Overhead) added to the head portions of the respective virtual containers when the plurality of frames are frames of the STM (Synchronous transfer mode) and the virtual containers included in the frames of the STM are a VC-3 format or a VC-4 format.

14. (Original) The transmission state indicating apparatus according to claim 8, further comprising:

a frame converting unit which converts the multiplexed frame acquired by the multiplexed frame acquiring unit into a concatenation mapping frame according to the rules of concatenation mapping; and

an index value detecting unit which detects a plurality of index values included in the concatenation mapping frame converted according to rules of the concatenation mapping by the frame converting unit.

15. (Currently Amended) A transmission state indicating apparatus ~~comprising: a plurality of clock reproducing units, in accordance with~~ for a predetermined transmission system, in which high capacity data is divided into a plurality of low capacity virtual containers and transmitted via a plurality of channels which configure a communication network based on clocks at the respective channels, the apparatus comprising:

a plurality of clock reproducing units which reproduce clocks of the respective channels from reception signals of a plurality of frames including the plurality of low capacity virtual containers;

a plurality of frame receiving units which receive the plurality of frames including the plurality of low capacity virtual containers in which the high capacity data is divided into the plurality of low capacity virtual containers and transmitted via the plurality of channels which configure the communication network, corresponding to the plurality of the respective channels, and detect the virtual containers at the respective channels based on the clocks of the respective channels reproduced by the plurality of clock reproducing units;

a reference clock generating unit which generates a reference clock;

a frame assembling unit which carries out mapping with respect to the virtual containers at the respective channels

25 included in the plurality of the frames received corresponding to
the plurality of channels by the plurality of frame receiving
units, based on the reference clock from the reference clock
generating unit, accompanying delay absorption processings
corresponding to the transmission states of the respective
30 channels, so as to ~~be~~ produce a multiplexed frame;

a pointer value detecting unit which successively detects
factors at the respective channels which are respectively
included in the plurality of frames included in the multiplexed
frame on which mapping has been carried out by the frame
35 assembling unit, and which are to be objects for delay absorption
processings corresponding to the transmission states at the
respective channels, as a plurality of pointer values for
respectively evaluating transmission states at the plurality of
channels which configure the communication network, and
40 successively corrects the plurality of pointer values based on
variations in phases at the respective channels to be detected
from phase differences between the clocks at the respective
channels reproduced by the plurality of clock reproducing units
and the reference clock generated by the reference clock
45 generating unit;

an information storage unit which stores the plurality of
pointer values successively detected and corrected by the pointer
value detecting unit in association with information for

indicating the plurality of pointer values in accordance with the
50 plurality of channels; and

a display unit which indicates, at the same time, the
plurality of pointer values for respectively evaluating the
transmission states of the plurality of channels which configure
the communication network, ~~at the same time~~ corresponding to the
55 plurality of channels, based on the plurality of pointer values
and the information for indicating the plurality of pointer
values corresponding to the plurality of channels which have been
~~stored in~~ stored in association with one another in the
information storage unit.

16. (Original) The transmission state indicating apparatus
according to claim 15, further comprising:

a control unit which carries out processing for indicating
the plurality of pointer values by relative values with respect
5 to a pointer value of a reference channel to be a reference among
the plurality of channels on the display unit.

17. (Original) The transmission state indicating apparatus
according to claim 15, wherein, when the predetermined
transmission system is an SDH (Synchronous Digital Hierarchy)
system, the plurality of pointer values include, as factors of
5 the respective channels to be objects for the delay absorption

processings, values of AU (Administrative Unit) pointers included in H1 bytes and H2 bytes which have been defined to show head portions of the virtual containers in case where the low capacity containers are contained in a payload, at the 4th row of an SOH (Section Overhead) frame in which the plurality of frames are frames of an STM (Synchronous transfer mode) and are added to the payload of the frame of the STM.

18. (Original) The transmission state indicating apparatus according to claim 15, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of the respective channels to be objects for the delay absorption processings, a value of H4 byte which has been defined at the 6th row of a POH (Pass Overhead) added to head portions of the respective virtual containers in case where the plurality of frames are frames of an STM (Synchronous transfer mode) and the virtual containers included in the frames of the STM are a VC-3 format or a VC-4 format.

19. (Original) The transmission state indicating apparatus according to claim 15, wherein, when the predetermined transmission system is an SDH (Synchronous Digital Hierarchy) system, the plurality of pointer values include, as factors of

5 the respective channels to be objects for the delay absorption
processings, values of AU (Administrative Unit) pointers included
in H1 bytes and H2 bytes which have been defined to show head
portions of the virtual containers in case where the low capacity
containers are contained in a payload, at the 4th row of an SOH
10 (Section Overhead) frame in which the plurality of frames are
frames of an STM (Synchronous transfer mode) and are added to the
payload of the frame of the STM, and a value of H4 byte which has
been defined at the 6th row of a POH (Pass Overhead) added to the
head portions of the respective virtual containers in case where
15 said plurality of frames are frames of the STM (Synchronous
transfer mode) and the virtual containers included in the frames
of the STM are a VC-3 format or a VC-4 format.

20. (Original) The transmission state indicating apparatus
according to claim 15, further comprising:

a frame converting unit which converts the multiplexed frame
on which mapping has been carried out by the frame assembling
5 unit into a concatenation mapping frame according to rules of
concatenation mapping; and

an index value detecting unit which detects a plurality of
index values included in the concatenation mapping frame
converted according to the rules of the concatenation mapping by
10 the frame converting unit.